



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/627,662 | 07/28/2000 | Sam S. Lightstone | CA990022US1 | 3033 |

24033 7590 03/25/2004

KONRAD RAYNES & VICTOR, LLP
315 S. BEVERLY DRIVE
210
BEVERLY HILLS, CA 90212

EXAMINER

LY, ANH

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2172

DATE MAILED: 03/25/2004

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/627,662

Applicant(s)

LIGHTSTONE ET AL.

Examiner

Anh Ly

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 02/23/2004 have been fully considered but they are not persuasive.

Applicants' argued that, "Neither the cited Ponnekanti nor the cited Watkins teach or suggest the claim requirement ... Rebuilding the index ... after all received data records have been added to the table." (Page 17, the 3rd paragraph and Page 18, lines 1-6).

Ponnekanti of 6,591,269 teaches a comprehensive to reorganize a table and rebuild the associated indexes (col. 18, lines 37-67). As a new record is added to a table, a corresponding index is added to an appropriate for the key value expressed by the record (col. 7, lines 50-62) and the operations for one entry record are delete, update or insert of an index (col. 13, lines 36-67 and col. 16, lines 2-67) and the Optimizer is responsible for optimizing the query and selecting the operation of indexes when the indexes are available (col. 6, lines 1-45). Watkins et al. of 6,457,017 (hereinafter Watkins) teaches incremental updates to the index list to increase the system response time to new or modified data. And see fig. 2, the bulk file creator is used to determine to delete, add or update in the indexes, which is an efficient method of file indexing (col. 3, lines 8-26 and col. 5, lines 10-38).

Claim Rejections - 35 USC § 112

2. Claims 27, 37 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Since “using the selected first operation or second operation to incrementally update or rebuild the index respectively...” The word “respectively” gives an ambiguous meaning for each selected operation. That is, first operation may incrementally update the index on the table, or it may rebuild the index from the table because the conjunction “OR” is used instead of the conjunction ... and

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, “the incrementally updates the index” and “rebuilds the index” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. Claims 57-65 have been added.
5. Claims 27-65 are pending in this application.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
8. Claims 27-36, 37-46, 47-56, 58, 61 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,591,269 issued to Ponnekanti in view of US Patent No. 6,457,017 issued to Watkins et al. (hereinafter Watkins).

Art Unit: 2172

With respect to claim 27, Ponnekanti discloses receiving data records to load into the table (loading new data records of a relational database into database in the operation of indexing: col. 7, lines 51-63); selecting one of a first operation and second operation, wherein the first operation incrementally update the index on the table as each received data record is added to the table and the second operation rebuilds the index from the table after all the received data records have been added to the table (a client/server database system with methodology for performing online indexing including rebuild, update delete indexes: col. 2, lines 58-60, col. 3, lines 11-30 and col. 13, lines 35-67; to meet the user's need, the user is able to select or use the operation of indexing via user interface for receiving the user commands: col. 4, lines 20-26 and item 160 in fig. 1B) and using the selected first operation or second operation to update the index with the received data (the online of performing indexing by user who would enter the commands to update or rebuild the index via user interface: col. 4, lines 20-26 and col. 13, lines 35-67).

Ponnekanti discloses an online of performing indexing of a client/server system for a data records of a relational database, the commands including update index, delete index and rebuild index from which the user would select or user for performing indexing for data records, but Ponnekanti does not teach incrementally updates the index on the table.

However, Watkins discloses performing incremental updates the index by indexing subsystem via indexing interface for receiving the commands from the user (col. 3, lines 10-20).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ponnekanti with the teachings of Watkins so as to obtain an operation for incremental updates the index in order to increase the database system response time. This combination would have made the method for maintaining indexes of all files in the system (Watkins – col. 58-67) and maintaining one or more database indexes on each table and allowing the database records of table to be organized in many ways to increase the speech of retrieving any particular data record of a table (Ponnekanti – col. 3, lines 4-30).

With respect to claim 28, Ponnekanti discloses determining which of the first operation or second operation is more efficient, wherein the first or second operation determined to be more efficient is the selected operation used for updating the index with the received data (rules for indexing including rebuild and update: col. 13, lines 50-67).

With respect to claim 29, Ponnekanti discloses wherein determining which operation is more efficient is a function of a percentage of the received data records to add to the table and characteristics of the index (efficient function or method for indexing: col. 8, lines 22-30, col. 9, lines 48-55 and col. 11, lines 15-28).

With respect to claim 30, Ponnekanti discloses wherein the characteristics of the index used in determining which operation is more efficient comprise a size and a complexity of the index (B-tree and the size of index: col. 17, lines 12-48 and col. 19, lines 25-35).

With respect to claims 31, Ponnekanti discloses wherein the index comprises a binary tree structure, and wherein a height of the index tree is indicative of the size and complexity of the index (col. 6, lines 65-67, col. 7, lines 1-67 and see fig. 2B).

With respect to claims 32-33, Ponnekanti discloses wherein determining which operation is more efficient further comprises considering at least one of the following factors: an estimated time to sort the index keys and an estimated time to rebuild the index from the sorted keys (col. 2, lines 1-16 and col. 6, lines 30-45); maintaining a list of threshold values for different index sizes (col. 13, lines 35-67 and col. 16, lines 2-67).

With respect to claim 34-36, Ponnekanti discloses the number of the received data records as a percentage of all data records in the table (col. 7, lines 50-55); wherein the index comprises a binary tree and wherein the list of threshold values provides one threshold for each of a plurality of different height index binary trees, wherein the threshold selected for comparison with the comparison value is based on the height of the index to update (size of b-tree or binary tree data structure: col. 5, lines 56-67 and col. 7, lines 55-64; see fig. 2B and col. 7, lines 1-28); and the threshold value and wherein the second operation is more efficient if the comparison value is greater than the threshold value (col. 8, lines 31-50 and col. 13, lines 50-67).

Claim 37 is essentially the same as claim 27, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 38 is essentially the same as claim 28, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 39 is essentially the same as claim 29, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 29 hereinabove.

Claim 40 is essentially the same as claim 30, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 30 hereinabove.

Claim 41 is essentially the same as claim 31, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 31 hereinabove.

Claims 42-43 are essentially the same as claims 32-33, except that they are directed to a system rather than a method, and are rejected for the same reason as applied to the claims 32-33 hereinabove.

Claims 44-46 are essentially the same as claims 34-36, except that they are directed to a system rather than a method, and are rejected for the same reason as applied to the claims 34-36 hereinabove.

Claim 47 is essentially the same as claim 27, except that it is directed to a program rather than a method, and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 48 is essentially the same as claim 28, except that it is directed to a program rather than a method, and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 49 is essentially the same as claim 29, except that it is directed to a program rather than a method, and is rejected for the same reason as applied to the claim 29 hereinabove.

Claim 50 is essentially the same as claim 30, except that it is directed to a program rather than a method, and is rejected for the same reason as applied to the claim 30 hereinabove.

Claim 51 is essentially the same as claim 31, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 31 hereinabove.

Claims 52-53 are essentially the same as claims 32-33, except that they are directed to a system rather than a method, and are rejected for the same reason as applied to the claims 32-33 hereinabove.

Claims 54-56 are essentially the same as claims 34-36, except that they are directed to a system rather than a method, and are rejected for the same reason as applied to the claims 34-36 hereinabove.

With respect to claim 57, Ponnekanti discloses a method as discussed in claim 27.

Ponnekanti discloses an online of performing indexing of a client/server system for a data records of a relational database, the commands including update index,

delete index and rebuild index from which the user would select or user for performing indexing for data records, but Ponnekanti does not teach incrementally updates the index on the table.

However, Watkins discloses performing incremental updates the index by indexing subsystem via indexing interface for receiving the commands from the user (col. 3, lines 10-20).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ponnekanti with the teachings of Watkins so as to obtain an operation for incremental updates the index in order to increase the database system response time. This combination would have made the method for maintaining indexes of all files in the system (Watkins – col. 58-67) and maintaining one or more database indexes on each table and allowing the database records of table to be organized in many ways to increase the speech of retrieving any particular data record of a table (Ponnekanti – col. 3, lines 4-30).

Claim 61 is essentially the same as claim 58, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 58 hereinabove.

Claim 64 is essentially the same as claim 58, except that it is directed to a program rather than a method, and is rejected for the same reason as applied to the claim 58 hereinabove.

9. Claims 57, 60 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,591,269 issued to Ponnekanti in view of US Patent No. 6,457,017 issued to Watkins et al. (hereinafter Watkins) and further in view of US Patent No. 6,026,406 issued to Huang et al. (hereinafter Huang).

With respect to claim 57, Ponnekanti in view of Watkins discloses a method as discussed in claim 27.

Ponnekanti discloses an online of performing indexing of a client/server system for a data records of a relational database, the commands including update index, delete index and rebuild index from which the user would select or user for performing indexing for data records. Ponnekanti does not teach incrementally updates the index on the table. Watkins discloses performing incremental updates the index by indexing subsystem via indexing interface for receiving the commands from the user (col. 3, lines 10-20). In combination, Ponnekanti and Watkins do not explicitly indicate teach a heuristic determination function.

However, Huang teaches the approach for performing an update to index maintenance (col. 2, lines 34-42, col. 3, lines 12-20 and col. 6, lines 8-21).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ponnekanti in view of Watkins with the teachings of Huang so as to obtain a determination function for indexing operation as well as indexing maintenance (col. 6, lines 15-22). This combination would have made the method for maintaining indexes of all files in the system (Watkins – col. 58-67), and an operation for incremental updates the index in

order to increase the database system response time, and maintaining one or more database indexes on each table and allowing the database records of table to be organized in many ways to increase the speech of retrieving any particular data record of a table (Ponnekanti – col. 3, lines 4-30).

Claim 60 is essentially the same as claim 57, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 57 hereinabove.

Claim 63 is essentially the same as claim 57, except that it is directed to a program rather than a method, and is rejected for the same reason as applied to the claim 57 hereinabove.

10. Claims 59, 62 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,591,269 issued to Ponnekanti in view of US Patent No. 6,457,017 issued to Watkins et al. (hereinafter Watkins) and further in view of US Patent No. 6,360,228 issued to Sundara et al. (hereinafter Sundara).

With respect to claim 59, Ponnekanti in view of Watkins discloses a method as discussed in claim 27.

Ponnekanti discloses an online of performing indexing of a client/server system for a data records of a relational database, the commands including update index, delete index and rebuild index from which the user would select or user for performing

Art Unit: 2172

indexing for data records. Ponnekanti does not teach incrementally updates the index on the table. Watkins discloses performing incremental updates the index by indexing subsystem via indexing interface for receiving the commands from the user (col. 3, lines 10-20). In combination, Ponnekanti and Watkins do not explicitly indicate teach an input index meta-data.

However, Sundara teaches user inputs or supplies meta-data defining an index type, the metadata describes the index domain (col. 1, lines 54-67 and col. 8, lines 2-42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ponnekanti in view of Watkins with the teachings of Sundara so as to obtain a user defined or inputted metadata (col. 1, lines 54-67). This combination would have made the method for maintaining indexes of all files in the system (Watkins – col. 58-67), and an operation for incremental updates the index in order to increase the database system response time, and maintaining one or more database indexes on each table and allowing the database records of table to be organized in many ways to increase the speech of retrieving any particular data record of a table (Ponnekanti – col. 3, lines 4-30).

Claim 62 is essentially the same as claim 59, except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 59 hereinabove.

Claim 65 is essentially the same as claim 57, except that it is directed to a program rather than a method, and is rejected for the same reason as applied to the claim 59 hereinabove.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is 703 306-4527 or via E-Mail: ANH.LY@USPTO.GOV. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breen can be reached on 703 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703 746-7239.

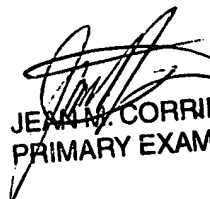
Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: Central Office (703) 872-9306 (Central Official Fax Number)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-6606 or 703 305-3900.


JEAN M. CORRIELUS
PRIMARY EXAMINER

ANH LY 
MAR. 18th, 2004